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PRINCIPAL PAPER

PROPAGATING NATIVE HAWAIIAN PLANTS

John Obata

(Continued from February 1973)

A synopsis of the author's experience in propagating the species.

THYMELAEACEAE Wikstroemia oahuensis (Akia) W. phillyreaefolia, W. uva-ursi Ninety percent of the hundred plus plants have survived since 1965 at WBG. Germination was good; developed rapidly in a pot. Should be good landscape plant in Honolulu. W. uva-ursi is popular as an ornamental in Japanese gardens.

MYRTACEAE Eugenia (syzygium) sandwicensis (Ohi'a ha) Easily germinated and grows well in the pot stage. Grows rapidly when first planted into the ground, but has not survived more than two years at the WBG.

Metrosideros polymorpha (and all varietals). ('Ohi'a lehua) No serious attempts made to germinate their seeds. Because of the common nature of this plant and the slow rate of development of some forms, no interest was placed on them. We have had some poor germination results in our feeble attempts. (Good results at L. A., Ed.)

GUNNERACEAE Gunnera petaloidea ('Ape'ape) Germination rate was poor at HBG. Seedlings did not pass the community pot stage. Transplants have not survived at WBG even under misting. Others have tried and failed. Seems to prefer a temperate climate as successes have been recorded from Montreal, Canada to Vancouver, B. C. and along the west coast states.

SHOUT
SHARE
IT

ARALIACEAE
Cheirodendron platyphyllum (Lapalapa) C. trigynum (Gaudichaudii) (Olapa)
C. trigynum germinated and has gone to the pot stage in a recent attempt.
C. platyphyllum seeds have not germinated. Seedling transplants of both species from the wild have not survived greenhouse conditions.
Munroidendron pubescens Plantings during 1965 and 1966 have not survived at WBG due in part to poor cultural conditions. Recent plantings have survived. This plant has excellent ornamental possibilities in an open, drier habitat. Germination rate has been fair.
Reynoldsia sandwicensis (Ohe, Ohe makai) Germination rate fair; pot growth excellent at HBG. No outdoor plantings have been observed. Based on its habitat, this species has possibilities as a dry, lowland landscape tree.
Tetraplasandra Hawaiiensis (Ohe) T. Meiandra (Ohe mauka) T. pupukeensis (Ohe) T. Waimeae (Ohe kioole) Germination rates poor. Grows well in pots. Eleven plantings at WBG have survived, some since 1965. A plant of T. Hawaiiensis has been growing along the fence overlooking the H-1 Freeway for about ten years. All tetraplasandra's should do well under cultivation. Oahu forms of T. gymnocarpa, T. Kaalae, T. micrantha, T. Kahanana and T. oahuensis not grown so far seem to have similar possibilities as ornamentals.

VACCINIACEAE Vaccinium (two unnamed Oahu species) (Ohelo) Aside from the ease of germination, all phases of its growth resulted in failures. Seedlings failed to develop beyond the early germination stage while none of the transplants from the wild survived for any length of time in the greenhouse. Both xerophytic and mesophytic types were tried.

EPACRIDACEAE Styphelia tameiameiae (Pukiawe) Germination rate was negligible, usually negative. No plants developed in the pots as seedlings or seedling transplants from the wild at HBG. Xerophytic as well as mesophytic types failed to grow.

MYRSINACEAE Myrsine lanaiensis (Kolea) M. (suttonia) lessertiana (Kolea) Germination rate poor, but growth in pots fairly good. Of eight large seedlings planted in the last five years, only two survived. Both have not grown much for years.
Myrsine are difficult to cultivate. They seem to be susceptible to a fusarium wilt. A drier habitat might help.
Myrsine (suttonia) sandwicensis (Kolea laulii) Germination was excellent, but plants did not develop in pots. They seemed to slowly expire.

PRIMULACEAE Lysimachia kalalanensis One plant did not survive at WBG. However, recent attempts at LA show some possibility. They were grown from cuttings.

SAPOTACEAE Nesoluma (chrysophylla) polynesicum (Keahi) None of the 1965 plantings have survived (five plants). Six of the thirteen plants in the 1967 planting still survive. A drier habitat should result in greater survival.

Pouteria (planchonella) sandwicense ('Ala'a) Germination rates are fair. Pot culture is not difficult. After three years four of the six plants have survived at WBG. Growth was slow.

EBENACEAE Diospyros (Maba) Hillerbrandii, D. sandwicensis (Lama) These two species have fair rate of germination and excellent growing rate in pots at HBG. Transplants into the ground grew rapidly during the first two years. Needs a drier habitat.

OLEACEAE Osmanthus sandwicensis (Pua, Olopua) Germination rate was good and seedlings grew rapidly during the pot stage. Five of seven plants have survived at WBG. This species should do well in drier habitats and even in the lowlands. Has landscape potential.

LOGANIACEAE Labordia membranacea (Kamakahala) Seedlings did not develop beyond the pot stage.

APOCYNACEAE Alyxia olivaeformis (Maile) Germination and pot growth rate were good. Nine of seventeen plants established themselves at WBG. Not recommended for lowland culture.
Ochrosia (Bleekeria) Mauiensis (Holei) Ochrosia (Bleekeria) sandwicensis (Holei) Germination rate and pot growth were good. All plantings at WBG are vigorous growers. Should adapt to lowland cultivation.
Pteralyxia macrocarpa (Kaulu) Seeds have not germinated at HBG. One wild collected seedling has survived planting at WBG. This species should adapt to lowland plantings.
Rauwolfia Mauiensis, Rauwolfia sandwicensis (Hao) Germination rate poor but growth in pots has been good. Only one of fourteen plants have succumbed during the last six years at WBG. Should adapt to drier lowland plantings.

LABIATAE Phyllostegia grandiflora (Kapana) Germination was not successful. A wild collected clone adapted to planting at WBG for about three years.
Stenogyne purpurea One planting did not survive.

SOLANACEAE
Solanum sandwicensis (Aiea) Germination rate was fair and growth rapid when potted. Has flowered and fruited in pot cultivation. No ground propagation has been attempted. A plant for the drier habitat.
Nothocestrum latifolia (Aiea) Growing as an outdoor transplant at WBG, but I have not observed them.

GESNERIACEAE Cyrtandra (various species) (Ha'iwale) Germination good, but seedlings and wild transplants have not survived the pot stage at HBG. At LA several species grew well in shady, well aerated, moist habitat. Two clones have grown on talus rocks on a gully floor and competed with tall weeds for about five years at LA.

MYOPHORACEAE Myophorum sandwicensis (Naio, Bastard sandalwood) Germination was fair. All plants grew well in pots and outdoor plantings. A hardy plant which has tremendous landscape possibilities. Mortality is rare even in cultivation.

PLANTAGINACEAE Plantago pachyphylla Germination was not attempted. Seedling transplants remained stunted and survived for about a year in greenhouse situations at HBG. Even flowered in cultivation.

RUBIACEAE Bobea elatior (Ahakea) Germination rate negligible. Seedlings did not survive for any length of time.

Canthium odoratum (Alahe'e) Germination rate and wild seedling transplant have been good. Under rare instances would a plant of this species succumb in cultivation. Second filial generation seedlings have been established at WBG. This species adapted to many habitats. If there is any weakness, this species requires a lot of light. Has done well as an ornamental in the heart of Honolulu. Probably the plant with the most potential for landscaping.

Gouldia axillaris Gouldia terminalis (Manono) These two species are easily germinated and pot cultured. Grew rapidly as an outdoor transplant at WBG for the first year or two and they flowered. Plants then rapidly deteriorated and death ensued.

Hedyotis species Germination was good and plants grew rapidly in pots at HBG. Growth in the ground at WBG was very rapid during the first year. Plants bloomed within a year to eighteen months and began the deteriorating process and death.

Nertera depressa (Makole) Runners survived up to a year in a shady, moist greenhouse at HBG. Does not seem to proliferate in cultivation. Germination was not attempted.

Psychotria (straussia) mariniana (Kopiko) Germination rate was good and the early growth rate in pots was rapid. With size, growth rate began to diminish. Outside transplants at WBG grew very slowly. Three of seven plants have survived during the last five years at WBG. A drier habitat would probably stimulate better growth.

Psychotria (straussia) Hawaiiensis Twenty-five of twenty-seven plants are still alive and growing after nearly two years at WBG.

LOBELIACEAE

Clermontia kakeana, C. oblongifolia, C. persicaefolia Germination rate was poor. Wild collected seedling transplants have survived in pots for as much as two years. Plantings at WBG have not survived more than one year. A shady, semi-dry habitat would enhance their survival. Susceptible to a fungal wilt.

Cyanea leptostegia Only one out of four plants has survived.

Cyanea grimesiana Only species of the lobeliads that has grown and germinated with ease. Even wild collected seedling transplants survived abuse. Several plantings at WBG survived at least a year, but most of the plants lasted from 2-4 years. Have bloomed and fruited under cultivation in a wet environment growing under Cibotium. It is a plant of drier habitats. Seemed to be a victim of a fungal wilt. Probably the only species that can be cultivated as an ornamental. Needs good drainage, shade, and a dry substrate.

Delissea subcorda Successfully germinated and grown in pots. Have not survived outdoor plantings for any appreciable length. Would have a better chance of survival with a drier habitat.

Lobelia gaudichaudia Germination was not attempted. Seedlings have barely survived six months under constant misting at HBG. It is a plant of the wet, wind blown summit areas.

Lobelia yuccoides Germination was not attempted. Wild seedling transplants have failed to grow beyond the early pot stage.

Rollandia lanceolata No germination attempted. Wild seedling transplants have survived pot culture and outdoor plantings. At WBG two plants have lasted 3 years in a moist, shady habitat. This species also seems to be another of the easier ones to cultivate.

Trematolobelia Seeds have failed to germinate at HBG. Wild collected seedling transplants did not survive the pot stage. A fungal wilt seemed to destroy this species.

GOODENIACEAE Scaevola gaudichaudiana Germination rate was fair. Plants readily adapted to pot propagation. Of the two plantings one survived five years at WBG. A drier habitat than WBG is needed to grow these plants.

Scaevola (camphusia) glabra (Ohenaupaka) Germination rate was good, but plants did not grow beyond the pot stage. A fungal disease seemed to destroy them.

Scaevola mollis (Naupaka kuahiwi) Germination rate was fair. Pot culture fair. One plant has been grown for several years at LA. Seems to prefer a drier well drained substrate.

COMPOSITAE Bidens cosmoides (Poolanui) Germination rate was poor. One of five plants has survived at WBG. At LA it has been successfully propagated.

Bidens mauiensis Has not survived outdoor plantings.

Bidens species (Kokolau) Wild seedling transplants from the drier Waianae Range, Oahu have not survived the pot stage at HBG. At LA, Bidens have been propagated with ease.

Dubautia laxa No seeds germinated. Wild transplants failed to survive in the pot stage at HBG.

Dubautia plantaginea No seeds germinated. Two wild collected seedlings, after being established were planted at WBG. They lasted for about four years.

Hesperomania arbuscula, H. arborescens Germination was negligible. Wild seedling transplants could not be established in pots. Germinated seeds did not pass the community pot stage.

Wilkesia gymnoxiphium (Iliau) Excellent germination and growth recorded in greenhouse cultures. Potted plants may grow out of doors if watered sufficiently. Easily cultured out of doors. Seemed to prefer a slight shady and moist habitat in outdoor cultivation. May grow well in full sunlight and may be considered as a prime ornamental. However, like its relative, the silversword, its life span will be terminated with a terminal bloom. After ground planting the life may be terminated in a 3-4 years. An unknown lepidopteran seem to cripple the plants with a terminal bud injury. Mealy bugs seemed to destroy some of the young seedlings.

(This concludes the article. Previous segments of this article were published in the Newsletters Dec. 1971; Feb. 1972; and Feb. 1973. Ed.)

EVENTS

Science Fair Botanical Society Awards

At the 16th Hawaiian Science and Engineering Fair, H.I.C., April 1973, the Hawaiian Botanical Society awarded several contestants whose projects were in the field of Botany. First prize winners in the Senior and Intermediate Division research projects each were given a certificate and their schools will receive a copy of Marie C. Neal's "In Gardens of Hawaii". Contestants winning Honorable Mention each received a certificate. The Hawaiian Botanical Society made no awards for display projects although several were distinctly meritorious. Botanical entries included:

Senior Division research projects - 18; Intermediate Division research projects - 25; Senior Division display projects - 1; Intermediate display projects - 19.

First Prizes

Senior Div. - Patricia L. Uyehara
McKinley High School, Oahu
The absorption of lead by Zea mays saccharata leaves.

Intermediate Div. - Grant Nakayama and Jay Phaup
Kailua Intermediate School, Oahu
Bio-orientation; what factors tell a germinating bean which way is up or down?

Honorable Mention

Senior Div. - Valerie Kubota
Baldwin High School, Maui
Inducing cell proliferation.

- Isaac Maeda
Waianae High School, Oahu
Effects of light and nutrients on spore dimorphism in Helminthosporium rostratum.

- Lon Machida (prize winner last year)
McKinley High School, Oahu
Studies on the survival and perithecial formation of Cochliobolus heterostrophus.

- Glen Yoshida (Hon. mention last year)
Kaimuki High School, Oahu
Influence of U. V. radiations on the development of higher plants.

Intermediate Div. - Lee Imada
Kahului School, Maui
Are molds, lichens and algae bactericidal.

- Stephan Kim and Eryle Okamura
Wahiawa Intermediate School, Oahu
Effects of commercial herbicides on nut grass.

- Alison Tamura
Ilima School, Oahu
How mold affects chemical preservatives.

(Dr. Noel Kefford, Chairman, Russell LeBarron and Ruth Gay represented our Society in the awards program.)

A Friend of Botany Passes on

Walter William Holt, the first State Forester (and last Territorial Forester) passed away on March 4. Born in Mokuleia, Hawaii, Forester Holt joined the Territorial Board of Agriculture and Forestry in 1928 as a forest nursery specialist. He was appointed Territorial Forester in 1955. Mr. Holt was a trained botanist with an exceptional knowledge of forest plants, both native and introduced. While active in many various organizations, his long time membership in and support of the work of the Hawaiian Botanical Society is highly notable. Ti plant hybrids and the White Kahili ginger are the results of Mr. Holt's plant breeding efforts. Aloha, Walter Holt, with an ilima lei.

AAAS Meeting

The year 1973 marks the 125th Anniversary of AAAS. The Association will hold a special inter-American meeting "Science and Man in the Americas" in Mexico City, June 20 - July 4. A broad range of topics will be explored: Arid lands, the sea, population, energy, education, earthquakes, nutrition.

PSA Meeting

The Pacific Science Association, Second Inter-Congress is scheduled for May 20-25, at the University of Guam. The Symposium Theme is "Impact of Urban Centers in the Pacific." Scientific sessions include the topic of Natural Area for the Pacific Region.

Species Trials on Kahoolawe

The State Division of Forestry together with the Forest Service, Soil Conservation Service, and U.S. Navy are conducting experimental plantings to seek plants and cultural methods for rehabilitation of eroded lands on Kahoolawe. During February 1973, the following species were planted:

	Native Species		Number of seedlings
1.	Acacia koaia	Koaia	69
2.	Dodonea eriocarpa	A'alii	60
3.	Erythrina sandwicensis	Wiliwili	38
4.	Gossypium sandwicense	Mao	25
5.	Myroporum sandwicense	Naio	61
6.	Dyosperos ferrea, var. sandwicensis	Lama	14
7.	Cocos nucifera	Coconut	25
8.	Pandanus odoratissimus	Hala	25
9.	Thespesia populnea	Milo	24
10.	Calophyllum inophyllum	Kamani	25
11.	Scaevola taccada, var. sericea	Naupaka	25
12.	Cordia subcordata	Kou	25
13.	Scaevola coriacea	Creeping naupaka	25
		Total	441

	Nonnative Species		
1.	Casuarina equisetifolia	Shortleaf ironwood	100
2.	Casuarina glauca	Longleaf ironwood	46
3.	Tamarix spp.	Tamarisk	37
4.	Acacia implexa	Implexa Acacia	35
5.	Eucalyptus punctata	Leather-jacket euc.	7
6.	Eucalyptus torrelliana	Cadaga euc.	32
7.	Phytolacca dioica	Ombu	44
8.	Callitris calcarata	Callitris	27

	Nonnative Species (cont'd.)		Number of seedlings
9.	Araucaria heterophylla	Norfolk-Island pine	14
10.	Euc. sideroxylon	Red-ironbark euc.	17
11.	Pinus brutia	Brutia pine	7
12.	Acacia mangium	Mangium acacia	5
13.	Coccoloba uvifera	Sea grape	25
14.	Messerchmidia argentea	Beach heliotrope	25
15.	Euc. camaldulensis	River redgum euc.	84
		Total	505

Forestry Research

Dr. N. P. Kefford, Professor of Botany, University of Hawaii is Chairman of a Task Force to set priorities for forestry research and extension at the College of Tropical Agriculture. Several meetings have been held since December 1972. The Task Force will soon have finalized its recommendations for highest priority areas of forestry research for the University. (Ed.)

Hartt Lecture

4th Annual Harold L. Lyon Arboretum Lecture, May 16, 2:30 PM, St. John Auditorium, University of Hawaii. "Mechanism of Translocation in Sugar Cane" Dr. Constance Hartt, Retired Plant Physiologist, HSPA.

Retiring Society Members

Members of the Society who are retiring from academic life this year include Gladys Baker, professor of mycology in the Department of Botany. Dr. Baker has served as Secretary and Vice President of the Hawaiian Botanical Society during her 12 years of membership. After completing her research with International Biological Program and her work with graduate students this summer, she plans to move to the mainland. She will spend winters in Sun City, Arizona and summers at her home at Lake Seneca in upstate New York.

Bea Krauss joined the Botany and Plant Physiology Departments in 1968. The enrollment in her popular course in ethnobotany expanded to over 500 students during this last year of her teaching. She will be completing her research in pineapple nutrition and morphology. Having served in all of the elected offices in the Hawaiian Botanical Society, she continues to contribute to many projects as an honorary member.

Ruth Gay

Visiting Professors

Dr. James F. Sutcliffe, from the School of Biological Sciences, University of Sussex, is spending the Spring Semester in the Department of Botany at the University. He has taken over the lectures and laboratories of Dr. Douglas Friend who is spending his sabbatical year in England.

Dr. Sutcliffe received his degrees from the Universities of Leeds and London. He was in the Department of Botany, Kings College, University of London, before moving on to Sussex. In 1956-57, he was a Research Fellow at Cornell University, conducting research in plant physiology; and in 1971 and 1972, he was associated with the Nanyang University, in Singapore.

Dr. Sutcliffe is a Fellow of the Institute of Biology, a member of the British Society for Experimental Biology, and a member of the British Association for the Advancement of Science. He has been editor of the prestigeous British journal, "Annals of Botany", since 1967.

Dr. Sutcliffe is the author of many scientific papers, as well as two books: "Mineral salts absorption in plants", and "Plants and Water".

Students in Dr. Sutcliffe's plant physiology class have great words of praise for him as a teacher; and his colleagues in the Department of Botany have enjoyed their association with him. They regret, however, that more of the "Hawaiian sunshine", which he came to enjoy, was not in evidence. He merely smiles when we say this is an "unusual year".

Dr. Sutcliffe is accompanied by his wife.

The cheerful individual who first occupied an office on the fourth floor, and now one on the fifth floor of St. John Hall, is Dr. Lázzló Orlóci, visiting professor from the University of Western Ontario. His ready smile was remembered by all those who met him in the hallways, before he was identified by name.

Dr. Orlóci is working on a monograph on multivariate analysis in vegetation ecology, and related subjects, as well as conducting a seminar in ecology. Dr. Orlóci's speciality is mathematical ecology, and he has published many articles in this field in international journals.

Dr. Orlóci is Hungarian-born, migrating to Canada where he earned his PhD in 1964 at the University of British Columbia.

Dr. Orlóci is deeply involved in the field of editing of scientific journals being on the Board of Editors or the Editorial Committee of the following journals: "Ecology", "Ecological Monographs", "Vegetatio, and Ecology of Western North America".

Dr. Orlóci is accompanied by his wife. He says that he has enjoyed swimming especially, and has found his stay here interesting and enticing. He is much impressed with the work of the local ecological group, under the general supervision of IBP (International Biological Project). He finds the University of Hawaii facing problems similar to the ones faced in his "home" institution, where there are increasing demands on existing facilities and faculty in the face of cutbacks in funds.

John I. Kjargaard, who was project director of a scientific study of Waihoi Valley, on the island of Maui, last summer, has recently received word from Washington that he has been granted $15,250.00 for a similar study in the Hana Rainfall Forest. These projects are funded under the National Science Foundations' Student-Originated Studies program, with most of the participants undergraduates at a college or university. The purpose of this program is "to encourage college students to express in productive ways their concern for the environmental well-being of our Nation; and to provide support for groups of college and university students who can demonstrate their readiness to assume increased responsibility for their own education development".

This summer, several of last year's group will be participants in the Hana Rainfall Forest project. The Natural History Association is contributing an additional $1,600.00 to the project.

Bea Krauss

SOCIETY BUSINESS

Minutes of the Regular Meeting, March 5, 1973

The meeting was brought to order by the president, Ted Green at 7:40 PM. The minutes of the previous regular meeting were read and approved. The treasurer's report for March showed balances of $11,262.71 in the Neal Fund, $116.15 in savings and $547.01 in checking accounts. About 65 members had paid dues as of March 5. Thirty-eight members and nine guests were present.

Notice was made of the passing of Mr. Walter Holt on March 4. He was a long time, active member of the Society and a prominent forester in Hawaii. A letter of condolence was to be prepared as well as a floral piece pending funeral arrangements.

Reporting for the Agricultural Advisory Committee, Ron Hurov made mention of several bills relating to Agriculture in the State legislature. He said the Del Monte Corp. was phasing out the Pineapple Research Institute. An attendent problem was the fate of the Institute's library. Hurov wanted the Society to assist in its transfer to the University of Hawaii or other suitable recipient. He also discussed the drawbacks of the recent proposal to transfer the Extension Service from the College of Tropical Agriculture to the Open University. Several resolutions generated by the membership present on these matters were discussed. It was eventually moved and passed that a resolution on the PRI library be referred to the Executive Committee and that they expedite the matter without referring it back to the Society, and that the resolutions on Gilmore Hall, College of Tropical Agriculture and Extension Service be sent to the Legislature.

Reporting for the Conservation Committee, Ruth Gay reported on the progress with respect to wilderness areas in the leeward islands and in Haleakala National Park being prepared by the Federal Government, and the time and place on April 14 of a hearing on the former. Wayne Gagne added that Hawaii Volcanoes National Park was now in the process of delineating wilderness and they welcome public input. Ruth also made mention of the long-term Fish & Wildlife Plan being prepared for the State Division of Fish & Game by a firm based in Sacramento, California. This is the first plan of its type for the State, the first draft of which generated much criticism from local conservationists.

In old business, Ruth Gay announced that the new meeting place for the Society will be Room 11, St. John Laboratories, University of Hawaii, 3190 Maile Way. She gave particulars on parking. Mr. Kirsch said that several groups which meet at Agee Hall, HSPA were in favor of a new building at the Foster Botanic Garden, and that the HSPA was not in a position to facilitate these groups again, even if for payment. The Marie Neal Fund Trustees indicated financial support up to $250 to the Hawaii Chapter of the Sierra Club for their proposal to prepare a movie on the impact of exotic herbivores on Hawaiian biota. Ruth Gay said that the judges for the Science Fair would be selected by the April meeting of the Society.

In new business, Ron Hurov discussed a resolution relating to the Pineapple Research Institute's library and research files, to the effect that they remain in Hawaii as an integral unit. Bea Krauss said that the research files would remain secret, but Dr. Doty added that an individual should not feel constrained to ask for specifics from these files.

The vice-president, Dr. Theobald, introduced the speaker, Dr. John Porter, Assistant Professor, Botany Department, University of Hawaii who gave an illustrated presentation on the "Phenology of Plants in Hawaii".

Following this John Obata showed some flowering ohai (Sesbenia tomentose) propagated from a Kaena Point, Oahu population. Dr. Warner showed an unusual cluster of 9 lemons and some cooking bananas and dwarf bluefields. Mr. Kirsch showed some new orchid crosses.

Hostesses for the evening were Mrs. Beaumont and Mrs. Kirsch.

W. C. Gagne

Preservation of Natural Areas

At the regular meeting of April 2, 1973, Dr. Raymond Fosberg talked on the topic "Preservation of Natural Areas". This topic is gaining more and more attention. Dr. Fosberg explained his concepts of natural areas, the need for endangered species lists, and international developments in information and materials exchange. While some progress is being made in some areas, he is concerned that for important islands in the south pacific there are no adequate programs for natural area preservation. Following Dr. Fosberg's talk, Dr. J. L. Gressitt and Steve Montgomery reviewed the status of the natural areas program in Hawaii.

Resolution

The following was adopted unanimously by the membership at the regular meeting, April 2, 1973:

Whereas the Hawaiian Islands National Wildlife Refuge is a significant natural preserve for the protection of rare plants and animals; and

Whereas these islands can serve as well-defined laboratories for the study of evolution in isolated populations and for the study of biological ecosystems; and

Whereas most of these islands are essentially unknown botanically; and

Whereas the major botanical research needs on these islands deal with the dynamic relationships between the native and introduced species, the ability of certain native species to compete successfully with introduced species and the overall effects on the ecosystem of vegetation changes; and

Whereas the above research involves plant taxonomy, ecology, physiology, morphology, microbiology, genetics, soils and related aspects of zoology; and

Whereas a public hearing will be held on April 14, 1973 for the purpose of developing information with respect to the desirability of including the Hawaiian Islands Wilderness Proposal in the National Wilderness Preservation System; now, therefore,

Be it resolved that the Hawaiian Botanical Society goes on record as supporting the Hawaiian Islands Wilderness Proposal; and

Be it further resolved that this resolution be presented as testimony at the April 14, 1973 public hearing.

(Based on the above, Ruth Gay, Chairman of the Environmental Committee presented testimony at the public hearing on the Hawaiian Islands Wilderness proposal on April 14, 1973. Ed.)

PUBLICATIONS

Report to the Governor, 1971-72

State of Hawaii, Department of Land and Natural Resources, 95 pages, January 1973.

This report describes major activities of the Department and supplies extensive statistical data for Fiscal Year July 1, 1971 to June 30, 1972. It is the latest in a series which began when Hawaii became a state.

In arrangement and manner of presentation this issue is the culmination of a metamorphosis which began three years previously. Prior to that time, the reports consisted of a number of almost disconnected sections, each dealing with one of the Department six divisions, Conveyances, Fish & Game, Forestry, Land Management, Parks, and Water & Land Development. The new report, which presents the narrative material by broad programs, does a better job of pulling like things together for the benefit of the reader. The four major sections and pages devoted to each:

Economic Development	6
Protection of Environment	8
Leisure Time	13
Government-Wide Support	3

This format is conducive to easier understanding and evaluation of the Department's policies and accomplishments.

The last half (55 pages) is composed of statistical information, mostly in the form of standardized tables and tabulations. Contents run the gamut from number of citations for hunting without a license (17), to number of fires in forestry protection areas (43), to income from leases ($2 1/2 million). It is a mine of factual information concerning Hawaii's natural resources.

The report is clearly written and attractively illustrated. It speaks about some of the problems, such as the decline of ohia and cattle trespass in the forest reserves, as well as the positive accomplishments and should be a useful information source to all Hawaiian conservationists.

Russell K. LeBarron

Food for thought

"Replenish the earth and subdue it", Genesis 1:28, Human Touch Often Improves the Land. Réne Dubos. Smithsonian Vol 3 (9):18-28, December 1972.

Réne Dubos is Emeritus Professor, Rockefeller University and member, President's Citizen Advisory Committee on Environmental Quality, 1970 ---.

This paper presents a refreshing viewpoint on Man's impact on the environment which deserves the attention of all conservationists and environmentalists. The following summary prepared by Editorial Research Reports was copied verbatim from the Honolulu Advertiser, January 6, 1973. I have compared it with Dubos' original paper and consider this to be an accurate although very brief condensation.

Russell K. LeBarron

"There is danger in emphasizing only the destructive aspects of man's impact on his environment. Our civilization will become increasingly spiritless and dreary if we do not learn to recognize and cultivate positive environmental values to remember that man has frequently improved on nature by transforming it either for profit or love. Intact, many of the earth's potentialities remained unexpressed until they were brought out by human labor, imagination and indeed fantasy.

"Whatever the characteristics of the environment, a new kind of value always emerges with intimate and long association between man and the landscape. According to Robert Graves, the Moslems use the word baraka to express the sense of blessedness that attaches itself to places and objects after years of loving care. This must be the same notion that Tagore had in mind when he wrote of the wooing of the earth-the "... harmony with nature attained through intelligent dealings."

"In most parts of the globe...men have been humanizing the earth since the late Stone Age and have literally shaped the landscapes in which we live. Much of the earth's surface used to be covered by forests and marshes ... Wilderness has thus been replaced by man-made ecosystems which have become so familiar that they are commonly assumed to be of natural origin. In fact, it is man who has created most of the "nature" celebrated by artists and poets.

"I believe that by inserting our dreams and aspirations into ecological determinism, we can enrich the earth and diversify its manifestations by imposing human order on it and bringing out its hidden potentialities. We can manipulate the raw stuff of nature to shape it into environments which are ecologically sound, economically profitable, esthetically rewarding and favorable to the growth of the human spirit."

Degener, Otto and Isa (March) 1973
Flora Hawaiiensis; the New Illustrated Flora of the Hawaiian Islands. Includes: Joinvilleaceae: 53a, Joinvilleaceae: 53a illus. Joinvillea Gaudichaudiana, Thymelaeacae: 261 illus. Wikstoemia recurva, 2 leaves.

Degener, Otto and Isa, and Hans Hormann (March) 1973
Degener's Floria Hawaiiana, Mosses of Hawaii (description and key) (4 leaves). Leaflet No. 2.

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University of Hawaii, 674-F. Exploratory studies on the physiological ecology of tropical forest communities and species. Culture and Management of Forests and Timber-Related Crops (RPA 111a). Forestry Research Progress in 1971, McIntire-Stennis Cooperative Forestry Research Program, U.S. Department of Agriculture, pp. 13-14.

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Papaya Mosiac Disease. Cooperative Extension Service, University of Hawaii, Leaflet 95.

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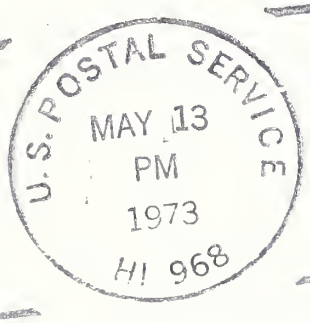

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